**Outline**

**Oral Cavity**

Dr. Bennett-Clarke

**General Remarks**

The boundaries of the oral cavity include; cheeks (Lateral) , palate (superior), tongue (and floor of the mouth), lips (Anteriorly) and oropharynx (Continuation posteriorly).

Definition of the rima oris- opening between the lips 🡪 also called labial fissure

Sublingual Fossa = Floor of the mouth

**1. Oral cavity**- The oral cavity is made up of two parts.

A. Vestibule 🡪 Between the gums and the cheek

- Buccal side of gums and teeth

B. Oral cavity proper 🡪 part that lies within the dental arches

- Tongue fills most of it at first

**2. Oropharynx**- Posteriorly the oral cavity opens into the oropharynx

A. Palatoglossal arch 🡪 Anterior arch

-- mucous membrane over Palatoglossal muscle (Skeletal)

-- Supplied by CN X

* Innervation of mucous membrane over arch = glossopharyngeal nerve (CN IX)

B. Palatopharyngeal arch 🡪 Posterior arch

-- mucous membrane over Palatopharyngeus muscle (Skeletal)

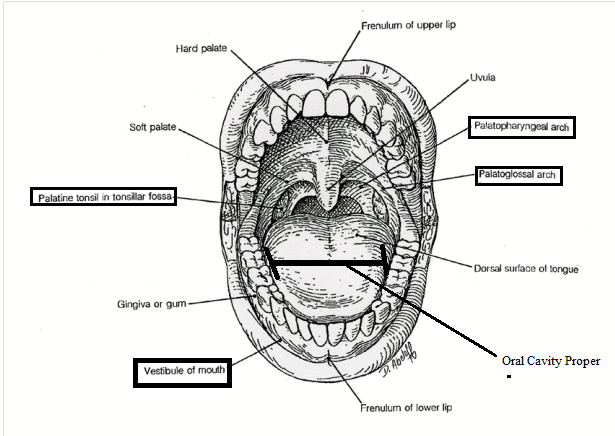
-- Supplied by CN X

* Innervation of mucous membrane over arch = glossopharyngeal nerve (CN IX)

C. Tonsilar bed and palatine tonsil

🡪 Between the two arches

* Spot where 2nd pharyngeal pouch was (lymphoid invasion)
* Innervation of mucous membrane over tonsil = glossopharyngeal nerve (CN IX)



**3. Lips-** Another name for the lips is the oral labia.  
🡪 Anterior Portion of Oral Cavity

Vermilion part of lip - Transition between skin of face & Mucous Membrane of oral cavity

\*\* No sebaceous, sweat, or salivary glands on this red part of the lip

A. Characteristics of lips:

1. Vermillion border – starts the transition from skin to mucous membrane

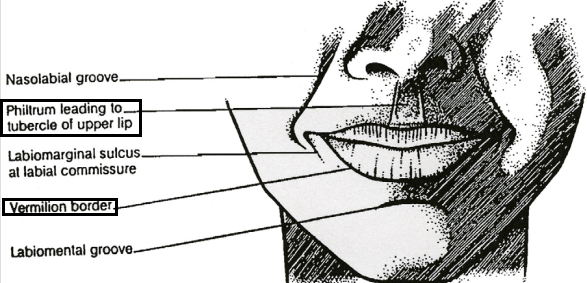
2. Philtrum 🡪 Shallow groove = from Frontonasal prominence -> intermaxillary segment

- Find cleft lip on margin of the philtrum

3. Labial frenulum 🡪 fold of mucous membrane attaching lip to gums

-- (See previous oral cavity picture)

B. Innervation to the lips

1. Upper lip 🡪 CN V2 = Infraorbital nerve

2. Lower lip 🡪 CN V3 = Mental nerve

4. **Cheeks**- The cheeks are continuous with the lips and extend across the zygomatic arch.

A. Characteristics:

1. Skin

Dual innervation

1. infraorbital nerve of CN V2

b. Buccal nerve of CN V3

2. Muscle

a. Buccinator = muscle of facial expression for cheek

🡪 Supplied by CN VII

3. Mucous membrane

a. Long Buccal nerve from CN V3

4. Parotid papillae

🡪 Openings of the parotid ducts

🡪 where it enters is in the vestibule = adjacent to 2nd maxillary molar

**5. Gums**- also called the gingivae, composed of fibrous connective tissue covered with mucous membrane.

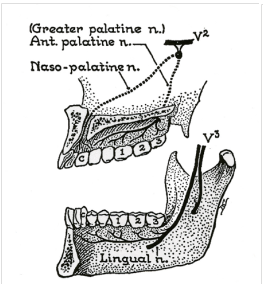
A. Characteristics:

1. Alveolar gingivae

🡪 Movable part

2. Gingiva proper

🡪 Attached part = immovable

* Makes maxilla and mandible look pink

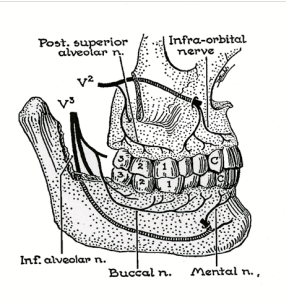
**Innervation of gums**: 🡪 any nerve in the area = likely to innervate it

\*\* Have gums on vestibule side & Buccal/lingual side

Lingual side

1. Maxillary
   1. Nasoplatine (anterior gums)
   2. Greater palatine
2. Mandibular
   1. Lingual nerve

Buccal side

1. Maxillary
   1. Infraorbital 🡪 labial branches
   2. Posterior Superior or anterior alveolar nerve
2. Mandibular
   1. Buccal Nerve
   2. Mental nerve
   3. Inferior alveolar

**Innervation of teeth:**

Maxillary: 🡪 CN V2

1. Posterior Superior alveolar
2. Anterior superior alveolar
3. Sometimes middle superior alveolar

Mandibular: 🡪 CN V3

1. Inferior alveolar 🡪 possibly part of Mental

**6. Tongue**- The main function of the tongue is to (1) move the food into the pharynx and (2) aid in phonation.

-Covered in Mucous Membrane

**Function:**

1. Digestion
   1. Mechanical
      1. Churning & forming the bolus
2. Phonation 🡪 formation of words/sounds

A. Two parts of the tongue

1. Oral portion 🡪 Anterior 2/3rd

- Movable/free portion

- Within oral cavity proper

2. Pharyngeal portion 🡪 posterior 1/3rd

- Fixed or non-movable

- Faces oropharynx

B. Inferior surface- is a thin layer of mucous membrane attached to the floor of the oral cavity via the **lingual frenulum.** 🡪 No lingual frenulum = touch nose to tongue

🡪 If lingual frenulum is to short = tongue tide (Ankyloglossia)

🡪 Lingual Vein tributary = used to deliver drugs in the sublingual fossa

C. Superior surface- is also known as the **dorsum** and is a roughened surface covered by finger-like projections called **papillae.**

Lingual papillae = cover the dorsum completely on the anterior 2/3rd

**Types of papillae**:

1. Filiform papillae

a. Most numerous & small thread like

b. In diagonal rows

c. \*\*\*\*Do not contain taste buds

d. Increases friction to help form bolus with rugae of hard palate

2. Fungiform papillae

a. Larger & club shaped

b. contain one of more taste buds

c. Randomly on dorsum of tongue

3. Foliate papillae

a. sometimes considered rudimentary in humans

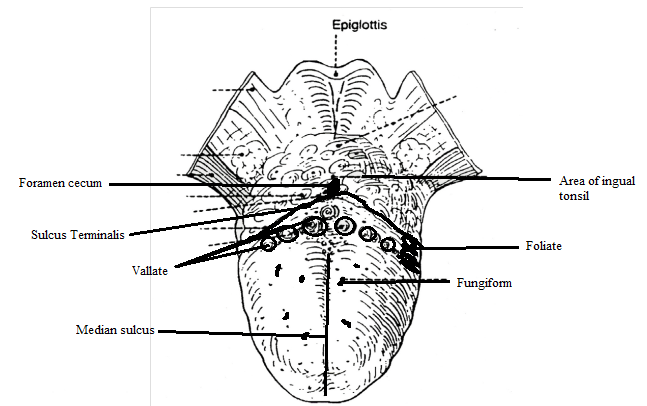
b. rows or ridges on lateral margins of the tongue

4. Vallate papillae

🡪 Just anterior to the terminal sulcus

🡪Large and circular

🡪Contain Numerous taste buds

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**Other features on dorsum of tongue**:

1. Median sulcus (groove) 🡪 Midline furrow

-- Where to lateral lingual/ Distal tongue buds met in midline

2. Sulcus terminalis

-- Where the Distal tongue buds met the hypobranchial eminence

3. Foramen cecum

--Where form thyroglossal duct/ thyroid diverticulum branched from tongue

4. Lingual tonsil 🡪 lymphatic tissue under the mucous membrane on posterior 1/3rd of tongue

D. **Innervation** (to the mucous membrane) 🡪 branches do not cross the median sulcus

1. Anterior 2/3 General sensation (pain, touch, temperature) 🡪 Lingual nerve

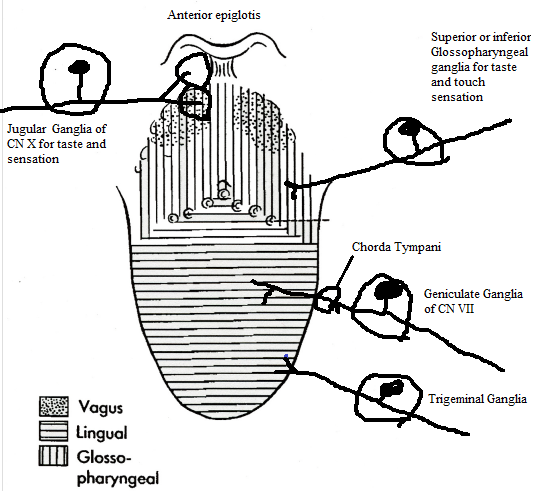
Special sensation (taste) 🡪 Chroda tympani

2. Posterior 1/3 General sensation (pain, touch, temperature)

Special sensation (taste)

🡪Both innervated by the Glossopharyngeal nerve

1. Very posterior part of the tongue and anterior epiglottis = taste & sensation from Vagus

\*\*\* Vallate papillae = supplied by glossopharyngeal nerve

E. **Muscles of the tongue**

1. Intrinsic muscles

- Within body of the tongue

- Are longitudinal, horizontally, or transversely arranged muscle fibers

- Responsible for all the detailed movements within the tongue for speech

2. Extrinsic muscles 🡪 Gross motions (Flatten, Stick-out, & Retract tongue)

🡪 Innervation of all extrinsic tongue muscles is hypoglossal nerve (CN XII)

* CN XII will be on the external surface of Hyoglossus muscle

• Hyoglossus 🡪 very quadrangular & Interdigitates with styloglossus

O: Hyoid bone

I: Lateral aspect of the body of tongue

Action: Depressing, flattening, or drawing down lateral aspects

• Styloglossus 🡪 Important for swallowing

O: Styloid process

I: Lateral aspect of the tongue

Action: retract or pull back, raise posterior aspect of tongue

• Genioglossus 🡪 only one you will see on dissection

O: Mental spine & hyoid bone

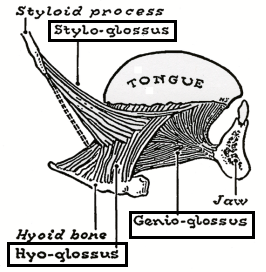
I: Along full length of the body of the tongue

Action: Major protrudor of the tongue

-Will as patient to stick out the tongue

- lesion of hypoglossal nerve = deviates away from lessoned side

\*\*Palatoglossus 🡪 when soft palate tensed = elevated posterior aspect of the tongue & not innervated by CN XII = innervated by CN X



**F. Blood supply to the tongue** 🡪 do not cross the midline of the tongue

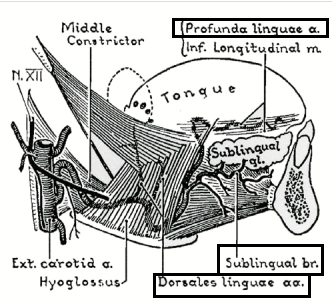
1. Lingual artery 🡪 from ECA and lose it behind/deep to Hyoglossus muscle and will go into the body of the tongue

Branches: (Will not see in lab)

• Dorsal lingual 🡪 end in posterior portion of tongue

• Deep lingual 🡪 Termination of lingual artery anteriorly

• Sublingual 🡪 Supplies sublingual gland & sublingual Fossa



**7. Salivary Glands**- three pairs of glands

1. Parotid glands-are the largest of the salivary glands. It is Anterior to the ear. The parotid duct exits the anterior aspect of gland & crosses the masseter and pierces the buccinator to end in the vestibule of the oral cavity emptying through parotid papilla adjacent to 2nd molar.

Innervation: CN IX (parasympathetic)

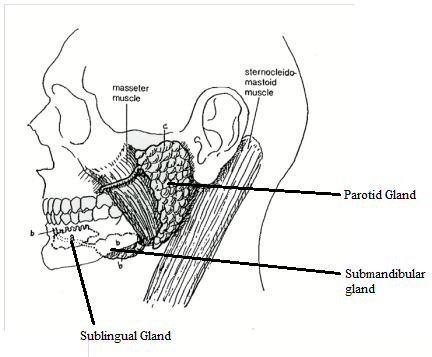
2. Submandibular glands- are located along the body of the mandible. The submandibular duct exits the anterior part of the gland, travels through the sublingual gland, and then crosses the lingual nerve in the sublingual fossa to open at the sublingual papilla. These are located adjacent to the lingual frenulum. It also envelops part of the posterior part of Mylohyoid (squeezes submandibular gland during swallowing)

Innervation: CN VII (parasympathetic)

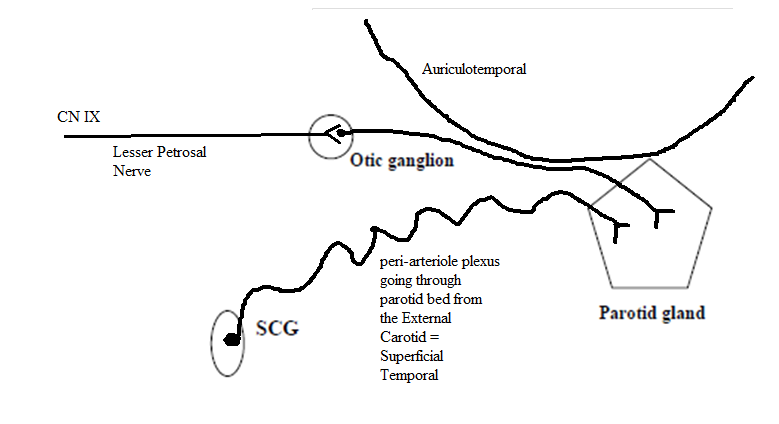
3. Sublingual glands- lie in the floor of the mouth deep to the tongue. These glands open via many ducts (10-15) directly into sublingual fossa.

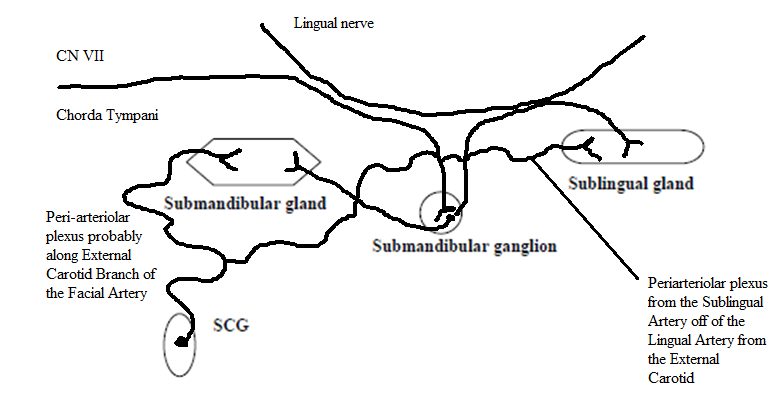
Innervation: CN VII (parasympathetic)

**Innervation to the salivary glands**

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**Parotid**



**Submandibular and Sublingual**

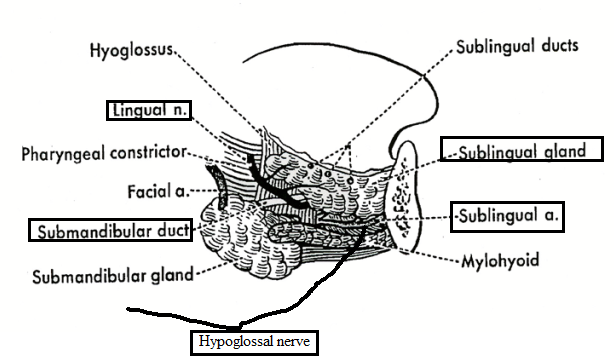
**8. Structures of the sublingual fossa** (floor of the mouth)

1. Sublingual gland 🡪 anterior in sublingual fossa may look like fat

2. Submandibular duct 🡪 Runs through the sublingual gland & open into sublingual papilla

3. Lingual nerve 🡪 crosses the submandibular duct

\*\*\* lingual nerve crosses submandibular duct because the lingual nerve wants to go to the tongue but the duct wants to from the submandibular triangle

1. Hypoglossal nerve 🡪will be more inferiorly located
2. Sublingual artery 🡪 NOT Lingual artery

**9. Muscles of suprahyoid region** (between hyoid & mandible) 🡪 Important actions on the tongue

1. Stylohyoid

2. Mylohyoid

3. Genoihyoid

4. Diagastric

All of these muscles act to raise the hyoid, tongue and floor of the mouth or steady hyoid for independent tongue movements. When the hyoid is fixed they can aid in opening the mouth. Fixation of the hyoid will be conducted by the infrahyoid muscles.

